

## APPENDIX N

Proc continuous-process(x)

// x is a data entry/value

If the corresponding variable is not selected by AMB, return;

If x is a missing value

Mark this record invalid;

Substitute it with mean value;

//mean value of this variable in training set collected during AMB

Else

If  $x > \max$  // maximum value of this variable in training set collected during AMB

$x = \max$ ;

Mark this record invalid;

End If

If  $x < \min$  // minimum value of this variable in training set collected during AMB

$x = \min$ ;

Mark this record invalid;

End If

End If

If the corresponding variable is exponentially distributed

Retrieve the mean and min value for log-scaling;

// It is mean and minimum value of samples of this predictor in training set when conduct

// exponential distribution test, might be different from those in whole training set

$$x = 1 - e^{-\frac{x - \min}{\text{mean} - \min}};$$

End If

Retrieve the mean and norm value for normalization;

$$x = \frac{x - \text{mean}}{\text{norm}};$$

Put x in the design matrix according to its column index and row number.

Proc categorical-process(x)

// x is a data entry/value, m is the number of records

If the corresponding dummy is not retained in the model then Return;

Get the column index of this categorical variable in the design matrix [i:j];

//  $1 \leq i \leq j$ ;

Fill 0s in entry(ies)[m, i:j];

If this dummy appears in the training set

Get the column index of this dummy, k ( $i \leq k \leq j$ , or  $k < 0$ );

If  $k > 0$

Fill a 1 in entry (m, k);

End If

Else

Mark this record invalid;

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End If
For k = i:j
    x = value of entry (m,k);    //1 or 0
    Get the mean and norm value for normalization;
    
$$x = \frac{x - \text{mean}}{\text{norm}};$$

    entry (m,k) = x;
End For
```